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Do Target Groups Appreciate Being Targeted? An Exploration of Healthy Eating Policy Acceptance

Abstract The impact of healthy eating policies does not meet policy makers' expectations; as such, better targeting and stakeholder support could improve their effectiveness. This research aims to identify whether a target group (the group affected by the policy measure) has higher acceptance levels or not. The study compared acceptance among citizens from the target with a matching non-target group, based on data from an online survey on citizens' support of healthy eating policies conducted among 3,003 adult respondents from five European countries (Belgium, Denmark, Italy, Poland, and the UK). The policies explored were bans on advertising to children and school vending machines, school meal regulations, education campaigns at schools or workplaces, menu nutrition information and food labelling, price subsidies for healthy food, and accessibility measures for the elderly. The study found that parents were more supportive of vending machine bans but less of school education campaigns. Education campaigns at workplaces were supported more by respondents regularly eating out at lunch, menu nutrition information and food labelling by those considering nutrition content in their food purchase, and price subsidies for healthy food by those in financial difficulty. Accessibility measures for the elderly, however, were supported less by older respondents. Members of the target group tend towards but are not especially supportive of healthy eating policy measures intended for themselves or their children, and the pattern differs by country. Thus, acceptance of policies should be surveyed by target group and country in advance of implementation. In the case of a lack of acceptance, the barriers should be explored further so that policy benefits can more effectively be communicated, to increase stakeholder cooperation and favourable peer influence.

Keywords Healthy eating · Public policy · Acceptance · Target group · Social marketing

Background

The public health problem caused by overweight and obesity among European citizens has been a dominant topic for the past decades. Despite public policy efforts, there is no indication that the epidemic is decreasing (Roberto et al. 2015; WHO 2011). Many policies have been implemented throughout Europe, but so far these policies have had a limited impact, and adoption differs across countries (Capacci et al. 2012). Further efforts have appeared in the new European health policy "Health 2020" (WHO 2014a). Given the lack of proven effectiveness of many of the healthy eating policies (Capacci et al. 2012), special priority is given to increasing effectiveness through better evidence, tackling barriers in implementation, and improving stakeholder involvement (WHO 2014b). Stakeholder acceptance and involvement, and specifically policies that target groups favour, are assumed to improve policy effectiveness. Little research, however, has explored target group agreement with healthy eating policies that concern them, especially in comparison with a similar group not in the scope of the policy in question (Harden et al. 2004). Because of the varying degrees to which policies have been discussed or already adopted in various countries (Capacci et al. 2012), target groups might have different opinions about, knowledge of, and experience with the policies, thus implying that societal debate (Barry et al. 2011) and stage of implementation can be relevant factors (Diepeveen et al. 2013).

The current study uses a large-scale survey on acceptance of public healthy eating measures conducted among citizens of five European countries as part of a European research project (Mazzocchi et al. 2015). The analysis presented focuses on policies for which a well-defined target group can be specified and compares the extent of support in the target group—or, in the case of children, parents as their caretakers—with respondents who are not part of the target group. The research question is thus whether members of the target group significantly differ from non-members in their support of the policy. The research hypothesis is that target group members are more supportive, given that the intention of the policy is to improve the welfare of the target audience, and resources are spent in favour of the target group, thus allocating tax money in their favour rather than other citizens'. The study contributes to the understanding of public policy acceptance among citizens/consumers of the policy and it follows a social marketing perspective recommending a targeted approach.

Theory and Previous Research

Public acceptance of healthy eating policies should be considered when implementing policies. Among the general public, a crucial stakeholder group is the targets of a certain policy (Heath and

Norman 2004). The specific target group's agreement with and acceptance of an activity should lead to better adoption as well as collaboration for more effective implementation of the policy (Harden et al. 2004). Important individual factors that might determine the effect are motivation, self-efficacy, and outcome expectation. In this regard, the social marketing approach, defined as "programs calculated to influence the acceptability of social ideas" (Kotler and Zaltman 1971, p. 5) to promote "voluntary behaviour of target audiences in order to improve their personal welfare and that of their society" (Andreasen 2002, p. 5), may be useful. The social idea in this case is healthy eating, and the target audiences are the respective citizens whom the program aims to influence. Accepting and appropriating the social idea in general and the program in particular should allow for the exploitation of key success factors of campaigns, such as emotional engagement, positive peer influence among the target group (e.g., word of mouth), and active participation in the further development of the program (Aschemann-Witzel et al. 2012a). Critical in applying social marketing to policy making is targeting the efforts to the group in focus. As Hawkes et al. (2015, p. 2410) state, "Effective food-policy actions are tailored to the preference, behavioural, socioeconomic, and demographic characteristics of the people they seek to support."

Research has examined the determinants of public acceptance, finding that the public favours policy measures aimed to children (Bos et al. 2013; Mazzocchi et al. 2015; Suggs and McIntyre 2011), a situation that might also be influenced by media coverage and portrayal of the issue in question (Barry et al. 2011). There is a general preference for healthy eating policies perceived as less intrusive (Branson et al. 2012; Mazzocchi et al. 2015; Millstone and Lobstein 2007), and there is a certain hesitation towards legal interventions (Bos et al. 2013), a finding similar to that in other policy domains (e.g., environmental policy; de Groot and Schuitema 2012; Jakobsson et al. 2000). Furthermore, citizen/consumer beliefs are relevant: If citizens believe that obesity is influenced by external factors such as, for example, availability of unhealthy foods, they are more likely to support policy action intended to improve healthy eating (Mazzocchi et al. 2015), though beliefs about effectiveness and fairness might also play a role (Bos et al. 2013). Political orientation and ideology has been explored as well, with mixed findings. For example, research has found that political orientation has an impact (Barry et al. 2012; Gollust et al. 2013) but also that political orientation and ideology are of limited explanatory value (Mazzocchi et al. 2015; Oliver and Lee 2005). Furthermore, research suggests that women are more favourable towards interventions (Diepeveen et al. 2013). Country differences potentially rooted in cultural factors, political practice, or implementation state of the policy (Diepeveen et al. 2013) also play a role. For example, research has found that policy acceptance is higher in Italy and lower in Denmark, with country differences in favour of public–private partnerships (Mazzocchi et al. 2015). Among adolescents of four

countries, Polish and Portuguese adolescents were more accepting of healthy eating strategies than Danish and UK adolescents (Stok et al. 2016), and country-specific levels of familiarity with nutrition labelling might explain the difference between German and Polish respondents in experiments with nutrition label formats (Aschemann-Witzel et al., 2013).

Little work has specifically explored acceptance of a policy among the target group directly affected by the policy versus other citizens beyond the scope. Three outcomes are possible: (1) target groups have a higher acceptance, (2) they have a lower acceptance, or (3) they show equal acceptance to the non-target group, possibly because acceptance is determined by factors other than target group membership. A straightforward assumption that target groups will appreciate the policy as well as the favourable effects might be underlying policy makers' considerations. For example, in a discussion of how to overcome the "policy cacophony" on obesity, Lang and Rayner (2007, p. 174) suggest, among other things, a scenario that focuses on the new generation and state that policy makers are "assuming that parents are more likely to do things for their children than for others," thus proposing that parents show favourable acceptance if their children are targeted. This is a common assumption, even though parents do not necessarily eat more healthfully themselves to be good role models (Aschemann-Witzel 2013; Laroche et al. 2012).

Diepeveen et al.'s (2013) systematic review of public acceptability of government intervention focusing on health-related behaviours found that acceptability varies depending on target behaviour, type of intervention, and respondent characteristics. They found, however, that support was the "highest [for] those not engaging in the targeted behaviour" (Diepeveen et al. 2013, p. 1). Their study was based on research showing that non- or ex-smokers or those consuming little alcohol were more likely to accept interventions on tobacco or alcohol consumption and that those having experienced harm from these substances were more supportive. Findings on the acceptability of obesity interventions depending on one's own diet or physical activity were mixed. One of the most prominent target groups in healthy eating policies is school children, with their parents serving as important gatekeepers (Seiders and Petty 2007). Evans et al. (2006) surveyed perceptions of different childhood obesity interventions and found that respondents with children at home were less supportive of any kind of weight evaluation at school, and the only activity receiving specific support from respondents with children was the provision of more healthy food in vending machines (Evans et al. 2006). In two examples of studies on stakeholder views of or barriers to implementing healthy eating policies at school, Welsh parents had objections, for example, to the type of school lunch served (Moore et al. 2010), while the majority of parents in Western Australia supported the policy (Pettigrew et al. 2012).

Although target group support seems a likely scenario at first sight, there are also arguments for counter-propositions, as well as counter-findings. These underpin the idea that target groups might not support a policy. The following potential reasons are present in theory and research: First, citizens might disagree to being influenced in any way, not even for the sake of their own welfare, because they regard it as their "own business" (Bos et al. 2013) out of a general desire to reject paternalism (Thaler and Sunstein 2003), which reflects a more specific psychological resistance to a restriction of their freedom (Brehm 1989). Second, a target group might regard the policy as "unfair" and societally unbalanced (e.g., when they believe that the public spending is not justified), that the blame is given to the wrong actor or party, or that public efforts contradict each other (Bos et al. 2013). Third, a target group might not necessarily want to perceive itself as such, as Pechmann et al. (2011, p. 24) illustrate in the example "We are not poor! Who says so?" Fourth, being in a target group might mean that the individual has more detailed knowledge about the issue, has considered the pros and cons of a measure, and has experienced these as well, potentially perceiving the effect unfavourably. Thus, while in general citizens might be quick to agree that the government should act to tackle the pervasive obesity problem by promoting the socially desirable behaviour of healthy eating (Felser 2007), they might have a more nuanced view when actually being in the scope of the policy, including disagreement. Based on these explanations, the counter-proposition implies that disagreement with a healthy eating policy might be especially pronounced among the target group, as a kind of "not-in-my-backyard" effect (Wolsink 2007) for healthy eating policies or a "cognitive polyphasia" of wishing policies to improve others' but not one's own behaviour (Branson et al. 2012).

A target group's negative or positive experience with a policy might depend on whether or to what degree a policy has already been adopted in a country. Most of the healthy eating policies adopted in European countries have been information measures such as public information campaigns or nutrition education efforts in schools, with most countries having run promotions of fruit and vegetable consumption, such as "5 a Day" campaigns (Capacci et al. 2012; De Sa and Lock 2008). However, prominent labelling with health logos (e.g., the keyhole or heart symbol) is especially widespread in Scandinavia (see, e.g., Aschemann-Witzel et al. 2012b). More intrusive policies such as advertising control have been used only in the Mediterranean and the UK/Ireland (Adams et al. 2012; Capacci et al. 2012), and a limited number of attempts have been used in Europe with regard to taxes on "unhealthy" ingredients (e.g., trans fat tax in Denmark; see also Bech-Larsen & Aschemann-Witzel, 2012). Nutrition information on menus, widespread in the US, is so far mainly a voluntary action of fast-food chains (Capacci et al. 2012). Food vouchers for low-income families are a policy option also used in the US (Basu et al. 2013); these constitute a

provision of price subsidies, which is used only sparingly in Europe, such as in the UK ("Healthy Start") and Poland (Capacci et al. 2012). Apart from the actual adoption of the policy, the sheer existence and direction of a discussion of certain policies will also likely trigger target group members to consider the issue and to develop an attitude towards acceptance or rejection of a policy. Thus, the debate in the various countries (Barry et al. 2011) on the background of country culture with regard to healthy eating and policy making should also affect target groups differently across Europe.

Methods

Overall Survey Design, Respondents, and Procedure

A questionnaire was developed from the results gathered during the course of a European Union (EU) research project (EATWELL 2011) as well as previous research (Oliver and Lee 2005). A more detailed description of the questionnaire and measurements and the overall analysis of acceptance levels appear in Mazzocchi et al. (2015). The survey was administered to adults in five European countries (Belgium, Denmark, Italy, Poland, and the UK) through computer-assisted web interviewing in February 2011. Questionnaires were translated and back-translated to ensure consistency across languages. The sample was extracted according to age and gender and using disproportional stratified sampling from an online household panel (GfK e-panel), with 414,000 potential respondents in the five countries. In total, 3,003 respondents were questioned, with a minimum of 600 in each country. The survey lasted on average 22 minutes, and the response rate was 18.7%. Non-responses did not follow a particular demographic pattern.

Measures Used for the Current Study

For 20 healthy eating policies, agreement or disagreement was measured on a 5-point Likert scale. Of these, we chose 10 to be explored, given that they target a specific group that can be identified with the help of the socio-demographic profile of the respondent or the healthy lifestyle behaviours that were measured. Not all groups are univocally defined by a question in the survey. When they were not, we approximated them by crossing one or more answers. We list the target groups identified for each intervention in Table 1. Parents of school-age children are considered targets for all the policies addressing children. People not in school full-time (i.e., excluding full-time students) and who eat out at lunch are considered targets for the workplace measures, given that no information about employment status was available. Respondents considering nutrient content when buying food are analysed as specifically addressed by regulations requiring nutrition labelling. Information on menus was also considered an intervention targeting those regularly eating out.

Price subsidies and accessibility measures to healthy food address low-income families and elderly consumers, respectively. Furthermore, we compared support for all 10 policies for obese and non-obese respondents, given that all the policies tackled obesity. Obese respondents were those with a body mass index (BMI) equivalent to an obese or morbidly obese condition.

Table 1

Data Analysis

The support and neutrality rates were derived from the 5-point Likert agree/disagree scale. We recoded the latter into a support/not support binary variable (agree and strongly agree versus disagree and strongly disagree), with neutrals and "don't know" recoded as missing values and into a neutral/non-neutral binary variable (neutral and "don't know" versus agree, disagree, strongly agree, and strongly disagree).

We regard the level of approval of a public policy (or neutrality towards it) as affected by whether the respondent is a beneficiary of that policy (i.e., belongs to the target group). We compare support (neutrality) rates between target and non-target individuals for each policy using a simple t-test. We expect that this raw comparison incorporates confounding effects, which might affect the approval or disapproval of a given measure. For example, parents and non-parents differ on some factors that might influence their support for policies, such as age, financial condition, health orientation, and so on. According to the evaluation literature (e.g. Imbens and Wooldridge 2009), a selection bias may affect the unrefined difference in support rates among parents and non-parents (Blundell and Dias 2009). Therefore, we checked for the robustness of the t-test results by performing propensity score matching (Becker and Ichino 2002; Dehejia and Wahba 2002; Lee 2013), with the aim to control for factors influencing the acceptance of the policy, beyond being a beneficiary of the policy. For example, when considering measures directed to children, we first match parents with non-parents who are as similar as possible to them (e.g., young adults, married or cohabiting, health oriented) and then compare their degree of support. This procedure allows us to isolate the support for the policy, due only to the fact of being parents, and not to other observable characteristics of parents. This procedure is widely employed in the estimation of causal treatment effects with observational data (e.g., Dano 2005; Jones et al. 2006).

We implement propensity score matching according to a three-step procedure. First, we estimate a probit model for each policy, where the dependent variable is equal to 1 if the respondent is a beneficiary of the policy and 0 otherwise and the explanatory variables are selected in a backward stepwise procedure among the following variables potentially affecting the attitude towards nutrition policies: age, gender, marital status, BMI, level of physical activity, health status,

education level, being a student, financial situation, being a parent (of children of different ages), household size, political view, frequency of eating out at lunch or dinner, frequency of eating at fast-food restaurants and prepared food, smoking and drinking frequency, use of labels, expenditure share for fruit and vegetables, dummy for suffering from heart disease, high blood pressure, high cholesterol or diabetes, belief about the availability of healthy and unhealthy food, and the attribution of obesity.[1] Second, we use propensity scores estimated in the previous step to match respondents in the target group to those in the non-target group.[2] Third, we estimate the average difference in support (or neutrality) rates between matched respondents. We repeat the procedure for each policy and each country, which results in the estimation of 60 probit models (10 policies investigated on the overall sample and five sub-samples).[3]

Results

First, we briefly highlight target group sample characteristics overall (Table 2) and sample characteristics across the five countries (Table 3). Second, we describe the results for each target group and policy as well as the country differences for the latter combination in terms of overall level of acceptance and comparison of target group versus non-target group (Tables 4 and 5, interpreting the estimated difference). This includes inspection of the share of respondents expressing neutrality in the overall sample (Table 4, lower half[4]). There are no significant results regarding obese or morbidly obese respondents,[5] and these are not presented further.

Tables 2 and 3

As previously discussed, respondents who directly benefit from a public intervention and those who do not might differ according to some factors (e.g., socio-demographic characteristics), which can affect the acceptance of the intervention itself. Table 2 shows how some characteristics differently distribute among target and not-target individuals (as defined in Table 1). The target group characteristics, by and large, reflect what might be expected. Specifically striking is that

[1] The latter variables derive from the extent of agreement or disagreement with the following statements: "There is too much unhealthy and fatty food in restaurants and supermarkets"; "Most people are overweight because they lack information about healthy eating and/or health risks of excess weight"; and "Most people are overweight because there are too many snack foods readily available in workplaces, shops and homes."

[2] We use the one to 10 nearest-neighbor algorithm.

[3] As Sianesi (2004) suggests, we test the balancing property for the estimation of propensity scores by comparing standardized biases before and after matching and the pseudo-R-square and likelihood ratio test on the joint significance of all regressors in the model before and after matching. Estimation outputs and test results are available on request.

[4] Owing to space limitations, neutrality rates for each country are provided as supplementary files. The characteristics of non-supporters in the sample and among the target group in particular, per policy, are also provided as supplementary files.

[5] A table is available in the supplementary file.

people in some or severe financial difficulties are characterised by lower shares of high education and lower rates of self-reported good or very good health status. Moreover, elderly people (above age 55 years) are characterised by higher overweight or obesity rates, while people considering nutrition content when buying food self-report higher shares of medium and high levels of physical activity. Comparing these target group characteristics across countries, we note some country differences (see Table 3 vs. Table 2): Polish respondents, for example, are younger and tend to live as couples or parents, while high education rates are lower in the Italian sample. The UK respondents report less smoking and physical activity and more overweight or obesity levels, and respondents from the Italian sample tend towards the opposite. Danish and Polish respondents report more physical activity and Belgians less, and more Polish respondents report good health status and Danish respondents the opposite.

Table 4 shows differences in support of nutrition policies between target and not-target individuals. We compare raw differences (simple t-test) in support and neutrality rates with refined differences estimated with propensity score matching. After socio-demographic characteristics of respondents are controlled for using nearest-neighbour propensity score matching, the following differences emerge (interpreting the estimated differences): Significantly greater target group acceptance for the policy occurs for three of the 10 policies, while significantly *lower* target group acceptance occurs for only one. For the target group of parents of school-age children (at least one under 16 years), we find that parents supported "education to promote healthy eating should be provided at all schools" to a slightly *lesser* extent (significant at a 5% level), while they agreed to "vending machines should be banned from our schools" to a significantly greater extent (significant at a 1% level). Furthermore, the respondents identified as workers eating out at lunch were significantly more likely to be favourable towards the statement "The government should subsidise firms which provide programmes to train their employees in healthy eating" (significant at a 1% level). Respondents characterised as people who consider nutrition content when buying food were more likely to be accepting of the policy described with the statement "All foods should be required to carry labels with calorie and nutrient information" (however, only at a 10% level of significance). Last, the respondents with some or severe financial difficulties were more likely to express acceptance towards the policy introduced as "The government should provide vouchers to low-income families to buy healthy foods at reduced prices" (significant at a 1% level). Neutrality rates were more pronounced for the non-target group in the case of labelling requirements and price subsidies; otherwise, there were similar shares of indifferent respondents between the target and the non-target groups.

For the results for each target group and policy by country (Table 5), several country differences as to whether target groups are more or less supportive of policies become apparent. Among parents of school-age children, those in the UK show relatively greater support for education campaigns and parents in Belgium for vending machine bans, but Polish parents differ from the non-target Polish respondents by being *less* supportive of both advertising restrictions (the difference is slightly significant at a 10% level) and education campaigns. Note that compared with the support rates for the policy across the five countries (see Table 4 vs. Table 5), UK parents are specifically supportive of education campaigns while UK non-parents resemble all non-parents, but Belgian parents are specifically supportive of vending machine bans, even though Belgian non-parents are less supportive than all non-parents. Furthermore, both Polish parents and non-parents are more supportive of advertising restrictions than those in the other countries, and both Polish parents and non-parents are less supportive of education campaigns provided in schools. Regarding the other policies, the target groups for education campaigns provided at workplaces and workplace meal regulations ("workers eating out at lunch") are more supportive than non-target others in the UK. However, both the UK target and non-target groups are far less supportive of these two policies than those in the other countries. Furthermore, the Belgian target group of people eating out is less supportive of nutrition information on menus than the non-target group in Belgium, but Belgian respondents are also far less supportive overall than those in the other countries. Moreover, people in some or severe financial difficulties are more supportive of subsidies via vouchers in the UK and Denmark than the non-target groups in these countries, and UK respondents are slightly less supportive of the policy overall. Last, with regard to accessibility measures for the elderly, respondents aged 55 years and older in the UK and Belgium are less supportive than the non-target group, while the opposite occurs for Polish respondents; in this case, the UK target group was especially less supportive and the Polish target group especially more supportive than the target groups in the other countries.

Tables 4 and 5

Discussion and Conclusions

Considering that target groups were more supportive of the policy in four cases but only less supportive in one, we find that overall, beneficiaries support a nutrition intervention more likely than not. Thus, the hypothesis of support among the target group is confirmed when using the estimations as a basis and when controlling for observable characteristics of beneficiaries. We therefore argue that the underlying general assumption in policy making (as expressed, e.g., by

Lang and Rayner 2007) that target groups are more likely than not to appreciate being in the scope of policy and expressing acceptance of it is correct. Diepeveen et al. (2013) found contrary results, though they based their conclusions largely on tobacco and alcohol interventions, which were not in the scope of our study. Instead, our study especially assessed interventions targeting children, for which Diepeveen et al. found a relatively high acceptance. This might explain the difference in the overall conclusions.

However, we also find that being among the target group did not per se yield more pronounced support. We find matches of policies and target groups in which the support was somewhat *less* in the target group. The cases in which the counter-hypothesis is confirmed are particularly noteworthy, given that challenges in implementing a policy might arise from a lack of acceptance. Other studies have also found mixed findings (Diepeveen et al. 2013) or a tendency for lower acceptance levels (Evans et al. 2006) among the target. When considering the countries jointly, our findings show that one policy did not receive more support among the target group: Parents were less supportive of "education to promote healthy eating" in schools. A possible explanation is that parents have a more nuanced view of arguments that non-parent respondents might not take into account, such as how this addition to the curriculum might affect learning of other topics or overall curriculum level. This might be similar to the lack of support among parents that Evans et al. (2006) found for weight evaluations in school: It might be that parents are more aware of the discomfort weight evaluation in school might mean for their children, something respondents with no children might not consider (Evans et al. 2006).

Other possible reasons for the relatively more or less support among target groups, however, reside at the country level, given that we find striking country differences. For example, we find within-country differences for some policies that did not appear in the general target group versus non-target group comparison, as well as cases in which target groups were relatively more supportive in one country but less in another country. As Diepeveen et al. (2013) and Barry et al. (2011) suggest, country differences in adoption or societal discussion of the policy could be the underlying reason.

For the country differences, we provide some observations of the pattern and considerations of the possible reasons for the findings, but these should be regarded as speculative ideas for interpretation. Especially in Italy but also in Denmark, we found no or only a few instances in which the target groups differed from the non-target group, while there were more examples of this in Poland, Belgium, and especially the UK. In the UK, a greater focus on problems regarding and policy answers to (childhood) obesity might underlie this observation. The latter might be one

reason that UK parents take such a clearly positive stance towards education campaigns and UK workers positively embrace policies directed to them, in comparison with the country sentiment of lower support for these. Parents' relatively lower support for education campaigns in schools overall seems to be largely driven by Polish parents' relatively low support. Whether this is rooted in Poland's political history or a less political focus on the need to enact policies against obesity at the time of the survey can only be speculated. Furthermore, we found particularly strong within-country disagreement over vending machine bans in Belgium, with parents expressing high support even though the country sentiment was of much less support than the other countries. This could indicate that there was a recent debate about vending machines in schools; however, we could not find confirmation of this interpretation. Regarding the introduction of nutrition information on menus in Belgium, people eating out might perceive this measure as intrusive and disturbing, while those who rarely or never eat out do not have the same perception; here, a reason for the stark difference in Belgium might be that eating out is more common there. Last, the elderly in both the UK and Belgium resented the policy of accessibility measures for the elderly, whereas the Polish elderly were more in support. For this policy, it is possible that the example of free home delivery that was phrased in the intervention was comparatively less popular in the 55-plus age group. Another explanation, however, might be that today's 55-plus population is a rather active group (especially perhaps those who participate in online panel studies), with a determination to be active and independent for the coming decades; thus, they might dislike the idea of needing to rely on free home delivery. Why these countries in particular differed remains to be uncovered. However, these are only speculations on possible reasons. A more in-depth analysis of non-supportive citizens in the scope of a policy is necessary to shed further light on the barriers perceived by these target groups as well as the within-country reasons. Furthermore, we find no differences between obese and non-obese respondents. This shows the possible heterogeneity of obese people and indicates that the obesity condition is not the major criterion of choice for segmenting and targeting in communication about policies.

In summary, consistent with the results identified for policy support among people belonging and not belonging to the target group, we conclude that (1) target groups are more likely to be supportive than not but also that (2) target groups are not per se supportive. In addition, (3) country differences exist in target groups' relative support or non-support. Overall, we propose that an exploration per target group of specific policies is necessary even when overall acceptance is high, as in the case of healthy eating education at school. As Pettigrew et al. (2012) indicate, even few "squeaky wheels" might draw so much attention to their arguments that policy makers might misjudge public opinion. Furthermore, a small sceptical minority, especially if their opinions are

echoed in the media, might also change an initially positive majority. Early exploration of an issue would help identify the barriers, which might range from incorrect "metaphors" about causes of obesity (Barry et al. 2009) to a lack of awareness of the problem (Etelson et al. 2003), and could then aid in the targeted design of communication that further explains the benefits of the intervention.

Limitations

For several of the matches between the intervention and target groups versus non-target groups, we found no significant differences, which might, among other things, be due to the target group approximation being too "rough"—that is, the level of detail in respondent characterisation in the data set was a limitation. For example, in the "workers eating out at lunch" case, the data did not allow singling out employees who eat lunch in their company canteens. Furthermore, using 55 as the age threshold was due to sample size constraints, but this decision might be debatable. Yet we argue that citizens from that age on, though not yet considered "elderly," are more personally involved in policies that tackle the older population given that they themselves are approaching that life phase. We also note that the results should be interpreted based on the specific phrasing of each policy: While a policy, especially if not yet known to respondents, must be explained, the choice of wording might influence the degree of acceptance. Furthermore, the self-reported nature of the variables might entail a bias, and social desirability might have contributed to the high acceptance rates. Especially for the measurement of BMI, self-reports might have biased the results, which could partially explain the lack of results for obese versus non-obese people. Moreover, the use of an online panel can be considered a limitation for representing the population of the five countries.

Implications

This study is one of the few to specifically focus on healthy eating policy acceptance among the target group, which is crucial for the effectiveness of policies. The findings suggest that target groups might be more accepting of a policy directed at them than not, but that this cannot be taken for granted, and greater country differences need to be taken into consideration. For example, the results suggest that various scenarios might be encountered with the two extremes outlined herein: First, a policy might generally be received favourably in Europe, and thus a country's policy makers may adopt it without considering stakeholder involvement to build and secure agreement under the assumption that this is not necessary. However, enactment of the policy might then be slowed and even hindered by the country's target group, which is much less supportive than expected. Second, due to a generally low acceptance in Europe, policy makers in a country might shy away from considering and adopting a policy. However, the target group in that country could be relatively

more supportive, and the chance to establish an effective policy in that favourable environment is then lost. Thus, as an implication, we suggest that surveys of acceptance of policies, which are increasingly called for, should include an exploration per target group and country of specific policies. Such results can help policy makers understand the degree of support and identify the need for follow-up studies to uncover the reasons for objections. Research suggests that major public support leads to social norms that trigger acceptance among citizens (de Groot and Schuitema 2012), a notion further confirming the effectiveness of policies backed up by target group acceptance. Finally, we note that the more accepted policies are not necessarily the most effective in tackling problems such as inequality in health (McGill et al. 2015). Policy making needs to responsibly weigh the advantage of target group support against the expected beneficial effect of the policy.

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Table 1. Policy measures and target groups.

Policy measure /question	Target group	Definition
Advertising restrictions addressed to children "The government should ban advertising for junk food and fast food that is aimed at children"	Parents of school-age children	Parents of at least one child <16
Education campaign provided in schools "Education to promote healthy eating should be provided in all schools"		
Vending machine ban in school "Vending machines should be banned from our schools"		
School meals regulation "The government should regulate the nutritional content of school meals"		
Education campaign provided in workplaces "The government should subsidise firms which provide programmes to train their employees in healthy eating"	Workers eating out at lunch time	Respondents who are not in full-time education and who eat out at lunchtime at least 1-2 times a week
Workplace meals regulation "The government should regulate the nutritional content of workplace meals"	Workers eating out at lunch time	Respondents who are not in full-time education and who eat out at lunchtime at least 1-2 times a week
Nutrition information on menus "All restaurants should be required to provide calorie and nutrient information in menus"	People eating out	Respondents who eat out for their evening meal at least 1-2 times a week or who eat out at lunchtime at least 1-2 times a week
Labelling requirements "All foods should be required to carry labels with calorie and nutrient information"	People considering nutrition content when buying food	Respondents who consider important (at least 5 in a 7-points Likert scale where 1 is extremely unimportant and 7 is extremely important) fat content or calorie content or cholesterol content when buying food
Price subsidies for healthy food aimed at low income families "The government should provide vouchers to low-income families to buy healthy foods at reduced prices"	People in some or severe financial difficulties	Self-assessed financial condition ("How is your household getting along financially nowadays? I/we have some financial difficulties, or I/we have severe financial difficulties)
Accessibility measures to healthy food for elderly "There should be public measures like free home delivery to support easier access to healthy foods for the elderly and those with lower incomes"	Elderly people	>55 years old

Table 2. Demographics of respondents, by target group.

	N	Freq (%)	Gender (% of female)	Age	High education	Married/cohabiting	Overweight or obese	Parents of school-age children (<16 years old)	Good or very good health status	Smokers	Medium or high level of physical activity
Parents of school-age children (<16 years old)	911	30.3%	**55.3%**	**41.8**	**37.8%**	**76.4%**	47.3%	100.0%	**60.0%**	8.9%	**70.8%**
Others	2092	69.7%	**49.8%**	**46.6**	**42.1%**	**54.1%**	48.8%	0.0%	**58.7%**	8.4%	**64.7%**
Workers eating out at lunch time	777	25.9%	48.6%	**43.6**	**48.2%**	60.0%	49.7%	**33.4%**	**60.2%**	**7.1%**	**69.1%**
Others	2226	74.1%	52.5%	**45.6**	**38.2%**	61.1%	47.9%	**29.3%**	**58.7%**	**9.1%**	**65.7%**
People eating out	1136	37.8%	51.8%	40.1	**45.6%**	**53.1%**	43.8%	**31.9%**	**60.4%**	**7.7%**	**68.3%**
Others	1867	62.2%	51.3%	48.1	**37.8%**	**65.6%**	51.1%	**29.4%**	**58.3%**	**9.1%**	**65.6%**
People considering nutrition content when buying food	1585	52.8%	**56.3%**	**47.3**	**39.7%**	**64.3%**	50.4%	**28.9%**	60.4%	8.6%	**70.1%**
Others	1418	47.2%	**46.1%**	**42.6**	**42.1%**	**57.0%**	46.1%	**32.0%**	57.7%	8.5%	**62.7%**
People in some or severe financial difficulties	800	26.6%	**56.1%**	**43.7**	**27.6%**	**56.9%**	51.0%	**35.7%**	**49.3%**	**11.8%**	65.7%
Others	2203	73.4%	**49.8%**	**45.6**	**45.7%**	**62.3%**	47.4%	**28.4%**	**62.6%**	**7.4%**	66.9%
Elderly people (>55 years old)	1013	33.7%	**38.2%**	**62.8**	**40.1%**	**73.1%**	**62.7%**	**16.7%**	**60.0%**	**8.3%**	**67.2%**
Others	1990	66.3%	**58.3%**	**36.1**	**41.2%**	**54.6%**	**41.0%**	**37.3%**	**58.6%**	**8.7%**	**66.3%**
Total population	3003		51.5%	45.1	40.8%	60.8%	48.4%	30.3%	59.1%	8.6%	66.6%

Figures in bold are significantly different (target vs. not-target group) at least at a 10% significance level.

Table 3. Demographics of respondents, by target group and country.

	N	Freq (%)	Gender (% of female)	Age	High education	Married/co habiting	Overweight or obese	Parents of school-age children (<16 years old)	Good or very good health status	Smokers	Medium or high level of physical activity
							UK				
Parents of school-age children (<16 years old)	150	24.9%	49.5%	43.36	38.7%	80.7%	51.3%	100.0%	57.3%	6.0%	70.5%
Others	453	75.1%	52.0%	46.58	43.2%	55.3%	55.4%	0.0%	56.6%	6.1%	55.2%
Workers eating out at lunch time	150	24.9%	47.3%	45.07	49.3%	58.4%	61.3%	27.3%	57.0%	2.2%	64.5%
Others	453	75.1%	52.7%	46.02	39.6%	62.7%	52.1%	24.1%	56.6%	7.4%	57.2%
People eating out	193	32.1%	48.3%	43.36	47.8%	57.1%	58.3%	26.1%	58.1%	1.7%	61.6%
Others	410	67.9%	52.9%	46.93	39.3%	63.7%	52.5%	24.3%	56.1%	8.1%	57.8%
People considering nutrition content when buying food	291	48.3%	58.9%	46.96	39.3%	63.4%	55.7%	24.4%	58.1%	6.4%	63.4%
Others	312	51.7%	44.4%	44.68	44.7%	59.9%	53.2%	25.3%	55.4%	5.8%	54.9%
People in some or severe financial difficulties	163	27.0%	49.7%	43.30	36.0%	58.7%	57.2%	29.8%	42.7%	13.4%	53.2%
Others	440	73.0%	52.0%	46.70	44.4%	62.7%	53.3%	23.1%	61.9%	3.4%	61.2%
Elderly people (>55 years old)	204	33.9%	47.8%	63.17	42.0%	72.3%	69.7%	12.7%	56.0%	2.0%	60.9%
Others	399	66.1%	53.3%	36.87	42.1%	56.1%	46.5%	31.1%	57.1%	8.2%	58.1%
Total population	603		51.4%	45.78	42.1%	61.6%	54.4%	24.9%	56.7%	6.1%	59.1%
							ITALY				
Parents of school-age children (<16 years old)	199	33.2%	51.0%	46.54	24.1%	80.1%	46.2%	100.0%	59.7%	11.1%	71.1%
Others	401	66.8%	52.4%	44.94	30.7%	51.7%	37.6%	0.0%	65.6%	11.0%	72.6%
Workers eating out at lunch time	202	33.7%	51.6%	43.96	36.4%	59.8%	38.5%	32.8%	64.5%	9.3%	76.0%
Others	398	66.3%	52.0%	46.24	24.6%	61.8%	41.4%	33.5%	63.2%	11.9%	70.1%
People eating out	304	50.7%	53.7%	41.31	33.8%	53.0%	36.7%	30.1%	64.6%	11.0%	76.1%
Others	296	49.3%	50.1%	49.75	23.0%	69.5%	44.3%	36.4%	62.6%	11.1%	68.0%
People considering nutrition content when buying food	399	66.5%	55.8%	46.61	29.3%	64.3%	41.8%	32.3%	63.8%	12.9%	73.1%
Others	201	33.5%	44.2%	43.20	26.9%	54.9%	37.8%	35.1%	63.3%	7.3%	70.0%
People in some or severe financial difficulties	235	39.2%	56.3%	43.97	19.8%	60.9%	43.6%	37.1%	56.8%	12.7%	73.1%
Others	365	60.8%	49.0%	46.43	34.0%	61.3%	38.4%	30.7%	68.0%	10.0%	71.4%
Elderly people (>55 years old)	220	36.7%	39.7%	60.97	26.4%	79.0%	51.3%	31.3%	66.2%	11.9%	74.3%
Others	380	63.3%	59.0%	36.49	29.7%	50.8%	34.1%	34.3%	62.2%	10.5%	70.8%
Total population	600		51.9%	45.47	28.5%	61.1%	40.4%	33.2%	63.6%	11.0%	72.1%
							BELGIUM				
Parents of school-age children (<16 years old)	152	25.3%	61.8%	41.62	39.2%	69.9%	40.8%	100.0%	54.6%	11.1%	49.3%
Others	448	74.7%	47.5%	47.62	45.5%	54.3%	46.9%	0.0%	61.1%	8.6%	54.1%
Workers eating out at lunch time	154	25.7%	52.8%	42.91	52.4%	49.5%	41.6%	26.1%	62.2%	7.2%	60.0%
Others	446	74.3%	50.5%	47.21	40.9%	61.3%	46.7%	25.0%	58.5%	10.0%	50.4%
People eating out	224	37.3%	56.0%	39.20	51.2%	41.1%	38.1%	26.2%	62.1%	7.4%	53.7%

Others	376	62.7%	48.2%	50.22	39.5%	68.4%	49.7%	24.7%	57.9%	10.4%	52.4%
People considering nutrition content when buying food	315	52.5%	50.9%	49.77	43.7%	61.5%	53.7%	22.0%	61.4%	7.1%	60.4%
Others	285	47.5%	51.4%	42.06	44.2%	54.7%	36.1%	28.8%	57.4%	11.7%	44.5%
People in some or severe financial difficulties	111	18.6%	57.7%	45.23	18.9%	48.2%	45.2%	26.8%	44.3%	10.5%	51.6%
Others	489	81.4%	49.6%	46.30	49.6%	60.5%	45.4%	24.9%	62.9%	9.0%	53.1%
Elderly people (>55 years old)	209	34.9%	29.2%	64.82	41.3%	70.6%	62.2%	12.6%	67.0%	9.9%	58.0%
Others	391	65.1%	62.8%	36.07	45.2%	51.6%	36.4%	32.0%	55.4%	8.9%	50.1%
Total population	600		51.1%	46.11	43.9%	58.2%	45.4%	25.3%	59.5%	9.3%	52.9%
						DENMARK					
Parents of school-age children (<16 years old)	144	24.0%	58.9%	39.87	54.3%	72.3%	48.4%	100.0%	53.6%	7.8%	78.4%
Others	456	76.0%	48.4%	48.34	47.3%	51.7%	52.4%	0.0%	46.7%	7.8%	70.4%
Workers eating out at lunch time	150	25.1%	47.2%	43.72	60.2%	65.3%	61.2%	36.2%	50.8%	8.4%	72.0%
Others	450	74.9%	52.2%	47.17	45.1%	53.8%	48.2%	19.9%	47.5%	7.6%	72.5%
People eating out	215	35.8%	49.4%	39.93	54.6%	57.2%	49.9%	31.7%	47.1%	9.3%	72.5%
Others	385	64.2%	51.7%	49.87	45.8%	56.3%	52.3%	19.7%	49.0%	7.0%	72.3%
People considering nutrition content when buying food	273	45.5%	58.1%	49.57	48.2%	59.1%	53.0%	21.2%	51.4%	7.2%	73.8%
Others	327	54.5%	44.9%	43.58	49.7%	54.6%	50.2%	26.3%	45.8%	8.3%	71.1%
People in some or severe financial difficulties	117	19.5%	62.9%	40.49	39.0%	41.9%	52.8%	32.5%	37.6%	8.0%	71.3%
Others	483	80.5%	48.0%	47.71	51.5%	60.2%	51.1%	22.0%	50.9%	7.8%	72.6%
Elderly people (>55 years old)	203	33.8%	33.3%	64.89	55.1%	68.2%	62.1%	3.1%	56.7%	8.7%	69.3%
Others	397	66.2%	59.9%	36.81	45.8%	50.8%	46.0%	34.7%	44.1%	7.4%	73.9%
Total population	600		50.9%	46.30	49.0%	56.7%	51.5%	24.0%	48.3%	7.8%	72.3%
						POLAND					
Parents of school-age children (<16 years old)	266	44.4%	56.2%	38.49	38.2%	77.2%	48.9%	100.0%	68.1%	8.1%	78.9%
Others	334	55.6%	49.0%	44.51	43.0%	58.0%	51.0%	0.0%	66.6%	9.0%	74.8%
Workers eating out at lunch time	120	20.0%	41.5%	41.83	46.2%	68.8%	50.0%	47.9%	66.5%	7.5%	71.1%
Others	480	80.0%	54.9%	41.84	39.5%	66.0%	50.1%	43.5%	67.5%	8.9%	78.0%
People eating out	200	33.3%	50.4%	36.34	45.6%	58.1%	40.6%	47.1%	68.5%	7.0%	74.7%
Others	400	66.7%	53.1%	44.58	38.5%	70.7%	54.8%	43.1%	66.7%	9.4%	77.6%
People considering nutrition content when buying food	307	51.1%	58.6%	44.16	42.1%	72.4%	50.7%	42.6%	65.0%	8.0%	79.1%
Others	293	48.9%	45.5%	39.41	39.6%	60.4%	49.5%	46.3%	69.7%	9.2%	74.1%
People in some or severe financial difficulties	174	29.0%	56.1%	44.86	28.0%	65.5%	57.6%	47.3%	56.5%	12.7%	72.5%
Others	426	71.0%	50.6%	40.60	46.1%	67.0%	47.0%	43.2%	71.7%	6.9%	78.3%
Elderly people (>55 years old)	176	29.3%	41.3%	59.75	36.8%	75.1%	70.1%	23.8%	52.7%	8.8%	74.4%
Others	424	70.7%	56.7%	34.41	42.5%	63.0%	41.8%	53.0%	73.4%	8.5%	77.6%
Total population	600		52.2%	41.84	40.9%	66.5%	50.1%	44.4%	67.3%	8.6%	76.6%

Table 4. Support rates and neutrality rates among target and not-target groups. Observed and estimated differences, total population.

	Target group	Others	% Difference		Estimated % difference	
			Support rates			
Advertising restrictions addressed to children	82.2%	82.4%	-0.2%		0.5%	
Education campaign provided in schools	93.9%	96.3%	-2.4%	*	-3.5%	*
Vending machine ban in school	73.6%	68.2%	5.4%	*	10.0%	**
School meals regulation	85.5%	84.2%	1.3%		-2.6%	
Education campaign provided in workplaces	76.6%	70.8%	5.9%	**	7.8%	**
Workplace meals regulation	61.6%	62.3%	-0.6%		3.7%	
Labelling requirements	97.0%	91.9%	5.2%	***	3.1%	
Nutrition information on menus	71.9%	73.7%	-1.8%		-3.0%	
Price subsidies for healthy food aimed at low income families	89.3%	75.4%	13.9%	***	9.7%	***
Accessibility measures to healthy food for elderly	83.1%	83.8%	-0.7%		-2.7%	
			Neutrality rates			
Advertising restrictions addressed to children	20.8%	20.2%	0.6%		-3.3%	
Education campaign provided in schools	10.3%	9.5%	0.8%		-1.7%	
Vending machine ban in school	30.0%	27.9%	2.1%		1.2%	
School meals regulation	24.0%	21.7%	2.3%		4.6%	
Education campaign provided in workplaces	27.3%	29.6%	-2.2%		-2.3%	
Workplace meals regulation	31.9%	31.9%	0.0%		-1.8%	
Labelling requirements	6.6%	20.5%	-13.9%	***	-5.3%	**
Nutrition information on menus	27.4%	28.9%	-1.5%		-2.2%	
Price subsidies for healthy food aimed at low income families	16.5%	24.6%	-8.1%	***	-6.8%	***
Accessibility measures to healthy food for elderly	21.3%	24.8%	-3.6%	**	0.3%	

Differences are statistically significant respectively at * 5% level, ** 1% level, *** 0.1% level. The column '% Difference' refer to the t-Test, and the column 'Estimated % difference' to the propensity score matching.

Table 5. Support rates among target and not-target groups. Observed and estimated differences, by country.

	Target group	Others	% Difference		Estimated % difference	
			UK			
Advertising restrictions addressed to children	79.9%	84.4%	-4.6%		-3.8%	
Education campaign provided in schools	98.8%	96.5%	2.2%		7.5%	**
Vending machine ban in school	72.7%	73.9%	-1.2%		-2.9%	
School meals regulation	89.8%	89.7%	0.1%		1.4%	
Education campaign provided in workplaces	66.0%	51.9%	14.1%	*	16.4%	*
Workplace meals regulation	52.0%	42.7%	9.3%		13.3%	*
Labelling requirements	98.5%	91.2%	7.3%	***	3.9%	
Nutrition information on menus	83.6%	75.2%	8.5%	*	4.8%	
Price subsidies for healthy food aimed at low income families	87.3%	68.9%	18.4%	***	18.6%	**
Accessibility measures to healthy food for elderly	69.4%	83.3%	-13.9%	**	-20.9%	**
			ITALY			
Advertising restrictions addressed to children	87.1%	87.4%	-0.2%		3.9%	
Education campaign provided in schools	95.5%	96.2%	-0.7%		3.1%	
Vending machine ban in school	72.2%	66.9%	5.3%		5.5%	
School meals regulation	92.7%	94.2%	-1.6%		3.2%	
Education campaign provided in workplaces	80.3%	77.7%	2.6%		2.3%	
Workplace meals regulation	86.9%	89.3%	-2.4%		-5.0%	
Labelling requirements	98.5%	92.6%	5.9%	**	3.9%	
Nutrition information on menus	83.6%	85.0%	-1.4%		0.3%	
Price subsidies for healthy food aimed at low income families	95.4%	90.0%	5.4%	*	0.3%	
Accessibility measures to healthy food for elderly	91.4%	93.6%	-2.2%		-1.2%	
			BELGIUM			
Advertising restrictions addressed to children	84.8%	85.2%	-0.4%		-0.3%	
Education campaign provided in schools	92.5%	96.9%	-4.4%		-3.4%	
Vending machine ban in school	77.9%	63.9%	13.9%	*	21.0%	*
School meals regulation	86.8%	88.5%	-1.7%		-7.5%	
Education campaign provided in workplaces	79.9%	81.1%	-1.2%		-2.4%	
Workplace meals regulation	67.9%	77.8%	-9.8%		-0.9%	
Labelling requirements	99.5%	96.7%	2.8%	*	3.8%	
Nutrition information on menus	55.3%	69.1%	-13.8%	**	-15.1%	*
Price subsidies for healthy food aimed at low income families	93.7%	84.1%	9.7%	**	7.2%	
Accessibility measures to healthy food for elderly	86.2%	88.5%	-2.3%		-10.8%	
			DENMARK			
Advertising restrictions addressed to children	63.8%	71.2%	-7.4%		-5.0%	
Education campaign provided in schools	94.4%	95.8%	-1.4%		2.9%	
Vending machine ban in school	66.1%	63.6%	2.5%		-13.4%	
School meals regulation	76.0%	69.4%	6.6%		3.6%	
Education campaign provided in workplaces	83.8%	79.0%	4.8%		4.7%	
Workplace meals regulation	39.6%	47.4%	-7.7%		1.3%	
Labelling requirements	97.5%	90.0%	7.5%	***	0.8%	
Nutrition information on menus	51.7%	59.3%	-7.6%		1.7%	
Price subsidies for healthy food aimed at low income families	69.5%	58.2%	11.3%		22.4%	*
Accessibility measures to healthy food for elderly	78.3%	70.7%	7.7%		8.3%	
			POLAND			
Advertising restrictions addressed to children	83.1%	85.1%	-2.0%		-10.8%	
Education campaign provided in schools	90.5%	93.7%	-3.2%		-7.5%	*

Vending machine ban in school	82.0%	75.0%	7.0%	9.1%	
School meals regulation	81.5%	76.8%	4.7%	1.0%	
Education campaign provided in workplaces	69.4%	64.7%	4.7%	7.8%	
Workplace meals regulation	42.1%	49.5%	-7.4%	-4.3%	
Labelling requirements	91.1%	89.7%	1.3%	-1.0%	
Nutrition information on menus	80.0%	80.1%	-0.1%	-0.7%	
Price subsidies for healthy food aimed at low income families	90.9%	75.1%	15.8% ***	9.8%	
Accessibility measures to healthy food for elderly	87.5%	81.0%	6.5%	20.5%	*

Differences are statistically significant respectively at * 5% level, ** 1% level, *** 0.1% level. The column '% Difference' refer to the t-Test, and the column 'Estimated % difference' to the propensity score matching.

Supplementary tables

Table A. Neutrality rates among target and not-target groups. Observed and estimated differences, by country.

	Target group	Others	% Difference		Estimated % difference	
			UK			
Advertising restrictions addressed to children	17.0%	16.3%	0.7%		12.8%	
Education campaign provided in schools	8.4%	10.0%	-1.5%		-1.6%	
Vending machine ban in school	29.1%	23.0%	6.1%		1.2%	
School meals regulation	20.1%	19.9%	0.2%		8.0%	
Education campaign provided in workplaces	27.8%	30.9%	-3.2%		0.0%	
Workplace meals regulation	34.6%	34.7%	-0.2%		-1.1%	
Labelling requirements	9.3%	19.3%	-10.0%	***	-4.9%	
Nutrition information on menus	27.1%	28.6%	-1.5%		-4.2%	
Price subsidies for healthy food aimed at low income families	17.0%	24.7%	-7.7%	*	-6.7%	
Accessibility measures to healthy food for elderly	26.8%	27.7%	-0.9%		-4.3%	
			ITALY			
Advertising restrictions addressed to children	17.3%	16.7%	0.5%		2.4%	
Education campaign provided in schools	7.9%	6.3%	1.6%		-2.1%	
Vending machine ban in school	30.0%	25.4%	4.6%		-1.7%	
School meals regulation	18.2%	13.0%	5.2%		7.4%	
Education campaign provided in workplaces	21.5%	27.5%	-6.0%		-9.7%	
Workplace meals regulation	23.9%	17.8%	6.1%		2.5%	
Labelling requirements	3.2%	17.0%	-13.8%	***	-5.5%	
Nutrition information on menus	24.2%	20.8%	3.4%		0.6%	
Price subsidies for healthy food aimed at low income families	13.4%	17.5%	-4.1%		-6.3%	
Accessibility measures to healthy food for elderly	13.1%	17.7%	-4.5%		-3.0%	
			BELGIUM			
Advertising restrictions addressed to children	25.3%	20.1%	5.1%		4.2%	
Education campaign provided in schools	13.2%	9.7%	3.5%		3.7%	
Vending machine ban in school	38.8%	30.1%	8.7%	*	0.4%	
School meals regulation	20.0%	23.7%	-3.7%		-4.5%	
Education campaign provided in workplaces	31.9%	30.7%	1.2%		-0.3%	
Workplace meals regulation	36.1%	31.0%	5.1%		5.2%	
Labelling requirements	9.7%	24.9%	-15.2%	***	-11.4%	
Nutrition information on menus	30.9%	34.9%	-4.0%		-8.7%	
Price subsidies for healthy food aimed at low income families	16.0%	23.3%	-7.2%		-3.8%	
Accessibility measures to healthy food for elderly	20.3%	22.5%	-2.2%		3.1%	
			DENMARK			
Advertising restrictions addressed to children	25.7%	25.6%	0.1%		-12.7%	
Education campaign provided in schools	6.5%	10.4%	-3.9%		-8.2%	
Vending machine ban in school	31.0%	30.5%	0.5%		24.1%	**
School meals regulation	24.4%	26.5%	-2.1%		4.0%	
Education campaign provided in workplaces	26.0%	27.7%	-1.7%		1.7%	
Workplace meals regulation	30.0%	35.0%	-5.0%		-8.4%	
Labelling requirements	7.2%	21.2%	-13.9%	***	-15.2%	*
Nutrition information on menus	31.4%	30.7%	0.7%		7.3%	

Price subsidies for healthy food aimed at low income families	26.5%	31.8%	-5.3%		1.1%
Accessibility measures to healthy food for elderly	26.7%	28.0%	-1.3%		1.3%
			POLAND		
Advertising restrictions addressed to children	20.3%	22.1%	-1.8%		-8.0%
Education campaign provided in schools	13.6%	11.6%	2.1%		2.1%
Vending machine ban in school	24.9%	30.9%	-6.0%		-1.9%
School meals regulation	32.6%	25.6%	7.0%		12.3%
Education campaign provided in workplaces	32.4%	30.6%	1.8%		4.9%
Workplace meals regulation	39.0%	38.9%	0.2%		4.1%
Labelling requirements	4.8%	19.1%	-14.2%	***	-5.3%
Nutrition information on menus	24.5%	27.8%	-3.3%		0.0%
Price subsidies for healthy food aimed at low income families	13.9%	23.8%	-9.9%	**	-10.7%
Accessibility measures to healthy food for elderly	19.8%	27.8%	-8.0%	*	1.8%

Differences are statistically significant respectively at * 5% level, ** 1% level, *** 0.1% level.

Table B. Table comparing across country with country results (Table 4 vs 5) and describing interpretation.

	Target group	Others	Interpretation
Policy (estimated difference in target group overall)	Support rates		
Advertising restrictions addressed to children (0.5%)	82.2%	82.4%	Polish parents are relatively more against, but else PL respondents overall are slightly more supportive than all countries
Education campaign provided in schools (-3.5% ***)	93.9%	96.3%	UK parents are relatively clearly more for, while UK non-parents do not differ from all countries non-parents, PL parents are relatively against, but also PL respondents overall are less supportive
Vending machine ban in school (10% ***)	73.6%	68.2%	BE parents are relatively clearly more for and more than parents in all countries, however, else BE non-parents are relatively less supportive and also less than non-parents in all countries
School meals regulation (-2.6%)	85.5%	84.2%	-
Education campaign provided in workplaces (7.8%***)	76.6%	70.8%	UK workers are relatively more for, but else UK respondents overall are less supportive than all countries
Workplace meals regulation (3.7%)	61.6%	62.3%	UK workers are relatively more for, but else UK respondents overall are less supportive than all countries
Labelling requirements (3.1*)	97.0%	91.9%	-
Nutrition information on menus (-3.0%)	71.9%	73.7%	BE people eating out relatively more against, but also BE respondents overall are less supportive
Price subsidies for healthy food aimed at low income families (9.7%***)	89.3%	75.4%	UK, BE, and DK low-income are relatively more for, but UK and DK respondents else are less supportive, and BE respondents more supportive
Accessibility measures to healthy food for elderly (-2.7%)	83.1%	83.8%	UK elderly are relatively more against, but else UK non-elderly do not differ from all countries non-elderly, BE elderly are relatively more against, but else BE respondents are more for, PL elderly are relatively more for, but else PL non-elderly are less supportive

Table C. Characteristics of non-supporters among target groups, by policy.

	Advertising restrictions addressed to children	Education campaign provided in schools	Vending machine ban in school	School meals regulation	Education campaign provided in workplaces
Female	47.8%	36.7%	55.3%	48.2%	54.2%
Overweight or obese	52.9%	36.6%	48.8%	47.5%	43.9%
Parents	100.0%	100.0%	100.0%	100.0%	35.7%
Age (mean)	39.17	40.90	40.27	40.03	45.30
High education	40.2%	31.3%	34.7%	44.2%	63.6%
Good/very good health status	64.6%	54.7%	67.9%	65.9%	64.1%
Married/cohabiting	70.0%	77.0%	70.2%	74.6%	55.8%
Medium/high level of physical activity	69.7%	74.0%	74.6%	72.7%	71.0%
Smokers	11.9%	19.1%	10.3%	12.0%	9.8%
UK	15.0%	6.8%	15.3%	13.1%	27.8%
Italy	17.8%	20.6%	26.0%	11.0%	23.9%
Belgium	13.8%	16.3%	17.2%	11.5%	16.2%
Denmark	27.0%	14.3%	18.6%	25.6%	13.7%
Poland	26.4%	42.0%	22.9%	38.7%	18.5%

Table C. Characteristics of non-supporters among target groups, by policy (continued).

	Workplace meals regulation	Nutrition information on menus	Labelling requirements	Price subsidies for healthy food aimed at low income families	Accessibility measures to healthy food for elderly
Female	44.6%	47.5%	49.5%	59.3%	33.2%
Overweight or obese	57.3%	37.4%	44.1%	54.0%	66.9%
Parents	32.9%	50.6%	45.0%	43.6%	20.2%
Age (mean)	42.80	44.37	40.03	42.65	63.35
High education	60.3%	37.5%	48.8%	29.8%	55.4%
Good/very good health status	63.3%	59.1%	62.4%	56.1%	63.5%
Married/cohabiting	60.3%	64.4%	53.3%	60.3%	77.9%
Medium/high level of physical activity	67.3%	68.1%	67.2%	68.0%	62.5%
Smokers	7.9%	7.2%	9.5%	7.6%	5.1%
UK	23.8%	9.1%	10.0%	23.2%	33.6%
Italy	10.1%	13.3%	16.3%	13.1%	12.4%
Belgium	15.6%	3.1%	29.9%	8.2%	17.2%
Denmark	30.9%	14.6%	31.0%	36.1%	23.9%
Poland	19.6%	59.9%	12.8%	19.3%	12.9%

Table D. Characteristics of non-supporters, by policy.

	Advertising restrictions addressed to children	Education campaign provided in schools	Vending machine ban in school	School meals regulation	Education campaign provided in workplaces
Female	51.1%	41.1%	50.1%	42.3%	48.5%
Overweight or obese	52.5%	45.6%	47.8%	55.9%	51.9%
Parents	37.0%	46.8%	33.7%	35.4%	36.9%
Age (mean)	41.75	44.01	40.66	46.20	47.15
High education	42.1%	35.7%	42.2%	43.8%	44.8%
Bad/very bad health status	9.7%	11.1%	8.9%	10.7%	9.4%
Good/very good health status	58.6%	48.0%	62.4%	60.5%	61.8%
Married/cohabiting	58.4%	61.6%	54.8%	65.0%	63.7%
Medium/high level of physical activity	67.1%	63.2%	69.0%	66.3%	66.4%
Non-smoker	90.0%	86.7%	93.8%	92.9%	91.1%
Non-drinker	29.2%	36.3%	28.1%	24.7%	24.7%
UK	19.1%	14.0%	18.4%	13.7%	31.5%
Italy	15.0%	18.2%	21.7%	8.6%	16.3%
Belgium	16.8%	16.3%	22.1%	15.4%	13.5%
Denmark	31.9%	19.9%	22.2%	36.6%	14.8%
Poland	17.2%	31.5%	15.6%	25.7%	23.9%

Table D. Characteristics of non-supporters, by policy (continued).

	Workplace meals regulation	Nutrition informa-tion on menus	Labellin g require-ments	Price subsidies for healthy food aimed at low income families	Accessibility measures to healthy food for elderly
Female	48.3%	46.9%	33.2%	47.0%	43.8%
Overweight or obese	53.6%	51.6%	47.8%	55.2%	55.7%
Parents	34.4%	36.3%	45.4%	33.6%	35.6%
Age (mean)	45.80	46.18	44.76	48.32	46.07
High education	46.8%	44.9%	36.3%	48.9%	53.1%
Bad/very bad health status	9.6%	8.3%	10.4%	9.5%	10.6%
Good/very good health status	63.5%	61.0%	55.2%	63.1%	61.1%
Married/cohabiting	62.0%	60.6%	60.9%	62.7%	64.8%
Medium/high level of physical activity	68.0%	67.8%	67.8%	67.1%	67.1%
Non-smoker	93.1%	91.1%	90.2%	93.9%	92.7%
Non-drinker	23.1%	25.6%	24.0%	20.1%	22.1%
UK	27.8%	16.3%	19.2%	24.5%	24.5%
Italy	7.2%	12.6%	13.5%	8.2%	9.9%
Belgium	13.0%	24.8%	6.1%	13.9%	15.6%
Denmark	28.0%	31.2%	23.8%	33.5%	29.8%
Poland	24.0%	15.1%	37.3%	19.9%	20.2%

Table E. Differences in support among obese and non-obese respondents.

	% supporting (sample size)		Difference, T-test	Difference estimated with nearest neighbour matching
	Non-obese respondents	Obese respondents		
Advertising restrictions addressed to children	82.4% (1901)	85.6% (436)	3.2%	0.7%
Education campaign provided in schools	95.7% (2194)	95.4% (479)	-0.3%	-1.1%
Vending machine ban in school	70.1% (1677)	76.1% (372)	6.0**	0.8%
School meals regulation	83.9% (1845)	84.6% (403)	-0.7%	2.3%
Education campaign provided in workplaces	71.1% (1683)	71.3% (363)	0.2%	2.0%
Workplace meals regulation	61.7% (1615)	59.8% (358)	1.9%	-0.6%
Nutrition information on menus	72.1% (1726)	73.8% (367)	-1.7%	-0.3%
Labelling requirements	94.7% (2101)	94.2% (469)	-0.5%	-1.1%
Price subsidies for healthy food aimed at low income families	78.2% (1844)	75.3% (405)	-2.9%	-0.5%
Accessibility measures of healthy food for elderly	83.0% (1805)	82.6% (409)	-0.4%	-2.0%
Non-obese	82.35% (2473)			
Obese	17.65% (530)			

Notes: Sample sizes in brackets. Differences are statistically significant at * 5%, ** 1%, *** 0.1% level.

Table F. List of covariates by target group and sub-sample (sample sizes in parenthesis)

TOTAL POPULATION	UK	ITALY	BELGIUM	DENMARK	POLAND
Parents of school-age children					
Household size	Household size	Age	Household size	Household size	Household size
Age	Female	Married or cohabiting (dummy)	Age	Age	Age
Married or cohabiting (dummy)	Age	Financial condition	Student (dummy)	Financial condition	Married or cohabiting (dummy)
Financial condition	Married or cohabiting (dummy)	BMI	Income	Education level	Education level
Education level	Financial condition	Household size	Married or cohabiting (dummy)	Student (dummy)	Student (dummy)
Student (dummy)	Education level			Political view	
Political view	Student (dummy)				
Health condition	Political view				
	BMI				
	Health condition				
(2854)	(457)	(556)	(600)	(569)	(600)
Workers eating out at lunch time					
Household size	Female	Female	Household size	Children <3 (dummy)	Female
Parents of children <16 (dummy)	Education level	Education level	Parents of children <16 (dummy)	Parents of children <16 (dummy)	Age
Female	Drinking habits	BMI	Age	Female	Financial condition
Age	Smoking habits	Children <3 (dummy)	Education level	Age	Political view
Financial condition	Budget spent into fruit and vegetables		Health condition	Financial condition	Drinking habits
Education level	Reading label (freq.)			Education level	Reading label (freq.)
				BMI	
				Reading label (freq.)	
(2854)	(567)	(563)	(581)	(534)	(582)
People considering nutrition content when buying food					
Female	Female	Female	Female	Household size	Female
Age	Education level	Age	Age	Female	Student (dummy)
Married or cohabiting (dummy)	Health condition	Budget spent into fruit and vegetables	Education level	Age	BMI

Parents of children <16 (dummy)	Eat out at lunch (Freq.)	Agree/disagree "There is too much unhealthy and fatty food in restaurants and supermarkets"	BMI	Education level	Suffering from high cholesterol
Education level	Eat in a fast-food restaurant (Freq.)	Agree/disagree "There are too many snack foods readily available in workplaces, shops and homes"	Suffering from high cholesterol	Political view	Physical activity (Freq.)
Student (dummy)	Agree/disagree "There is too much unhealthy and fatty food in restaurants and supermarkets"		Suffering from high blood pressure	Suffering from high cholesterol	Eat in a fast-food restaurant (Freq.)
Suffering from high cholesterol	Agree/disagree "Most people lack information on healthy food"		Physical activity (Freq.)	Suffering from heart disease	Agree/disagree "There is too much unhealthy and fatty food in restaurants and supermarkets"
Drinking habits			Eat prepared food (Freq.)	Eat in a fast-food restaurant (Freq.)	
Budget spent into fruit and vegetables			Drinking habits	Eat prepared food (Freq.)	
Agree/disagree "There is too much unhealthy and fatty food in restaurants and supermarkets"			Agree/disagree "Most people lack information on healthy food"	Agree/disagree "There is too much unhealthy and fatty food in restaurants and supermarkets"	
Agree/disagree "Most people lack information on healthy food"			Children <3 (dummy)		
(1553)	(317)	(373)	(323)	(343)	(399)
People eating out					
Parents of children <16 (dummy)	Female	Married or cohabiting (dummy)	Age	Children <3 (dummy)	Female
Female	Age	Education level	Married or cohabiting (dummy)	Parents of children <16 (dummy)	Age
Age	Financial condition	Student (dummy)	Financial condition	Female	Financial condition
Married or cohabiting (dummy)	Drinking habits	BMI	Education level	Age	Student (dummy)
Financial condition	Smoking habits	Drinking habits	Smoking habits	Financial condition	Political view
Education level	Budget spent into fruit and vegetables		Reading label (freq.)	Education level	Drinking habits

Drinking habits	Agree/disagree "There are too many snack foods readily available in workplaces, shops and homes"			BMI	Reading label (freq.)
Smoking habits	Education level			Agree/disagree "There is too much unhealthy and fatty food in restaurants and supermarkets"	
Agree/disagree "There is too much unhealthy and fatty food in restaurants and supermarkets"	Children <3 (dummy)				
(2007)	(458)	(563)	(569)	(315)	(582)
People in some or sever financial difficulties					
childpres	childpres	childpres	Female	Household size	Female
Female	Age	Female	Married or cohabiting (dummy)	Female	Age
Age	Married or cohabiting (dummy)	Age	Education level	Age	Education level
Married or cohabiting (dummy)	Education level	Education level	Health condition	Married or cohabiting (dummy)	Student (dummy)
Education level	Health condition	Student (dummy)		Education level	BMI
Student (dummy)		BMI		Student (dummy)	Health condition
BMI		Suffering from diabetes		Health condition	Suffering from high cholesterol
Health condition				Suffering from diabetes	
Physical activity (Freq.)					
(2699)	(458)	(563)	(581)	(576)	(556)
Elderly people					
Household size	Household size	Household size	Household size	Household size	Household size
Female	Female	Female	Female	Female	Married or cohabiting (dummy)
Married or cohabiting (dummy)	Married or cohabiting (dummy)	Married or cohabiting (dummy)	Married or cohabiting (dummy)	Married or cohabiting (dummy)	Parents of children <16 (dummy)
Parents of children <16 (dummy)	Parents of children <16 (dummy)	Parents of children <16 (dummy)	Parents of children <16 (dummy)	Parents of children <16 (dummy)	Education level
Financial condition	Financial condition	Health condition	Political view	Financial condition	Political view
Political view	Suffering from high blood pressure	Suffering from high blood pressure	BMI	Education level	BMI
BMI	Suffering from high cholesterol~l	Suffering from high cholesterol	Health condition	Health condition	Suffering from high blood pressure

Health condition	Suffering from heart disease	Suffering from diabetes	Suffering from high blood pressure	Suffering from high blood pressure	Suffering from high cholesterol
Suffering from high blood pressure	Eat in a fast-food restaurant (Freq.)	Eat out at lunch (Freq.)	Suffering from high cholesterol	Suffering from high cholesterol	Suffering from heart disease
Suffering from high cholesterol	Eat prepared food (Freq.)	Eat prepared food (Freq.)	Suffering from diabetes	Eat out at lunch (Freq.)	Eat in a fast-food restaurant (Freq.)
Suffering from heart disease	Budget spent into fruit and vegetables	Budget spent into fruit and vegetables	Suffering from heart disease	Eat in a fast-food restaurant (Freq.)	Budget spent into fruit and vegetables
Eat out at lunch (Freq.)			Eat out at lunch (Freq.)	Eat prepared food (Freq.)	
Eat in a fast-food restaurant (Freq.)			Eat in a fast-food restaurant (Freq.)	Budget spent into fruit and vegetables	
Eat prepared food (Freq.)			Drinking habits	Reading label (freq.)	
Drinking habits			Smoking habits		
			Reading label (freq.)		
(2748)	(597)	(600)	(531)	(569)	(556)